APRIL/MAY 2024

23UEL21 — ANALOG ELECTRONICS

Time : Three hours Maximum : 75 marks

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SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Write any four transistor biasing methods.

2. What is thermal runway?

3. What is the working principle of E-MOSFET?

4. Distinguish between FET and BJT.

5. What do you mean by positive feedback?

6. Write down the resonant frequency expression for phase shift oscillator.

7. Define bistable multivibrator.

8. State the applications of mono stable multivibrator.

9. What is a Zener diode?

10. What are the advantages of variable voltage regulator ICs?

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Explain the operation of a fixed bias circuit with neat diagram.

Or

(b) Describe the potential divider bias.

12. (a) Write the short notes on parameters of FET.

Or

(b) How do you differentiate the FET and MOSFET?

13. (a) With a neat diagram, explain the action of Hartley oscillator.

Or

(b) Explain the working of crystal oscillator.

14. (a) Draw and explain the working of monostable multivibrator.

Or

(b) Describe the working of Schmitt trigger.

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15. (a) With a neat diagram, explain the principle of fixed voltage regulator ICs.

Or

(b) Explain with the circuit, the working of variable voltage regulator ICs.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Write short notes on the following.

(a) Stability analysis

(b) Load line analysis.

17. Briefly explain the construction, working and characteristics of FET.

18. Draw the circuit diagram of Wien bridge oscillator and explain its working.

19. Discuss the working of an astable multivibrator and also derive an expression of the frequency oscillation.

20. Describe the working of Zener diode as a voltage regulator.

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